Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Eye care: percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma (POAG) who have an optic nerve head evaluation during one or more office visits within 12 months.

Source(s)

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma (POAG) who have an optic nerve head evaluation during one or more office visits within 12 months.

Rationale

Changes in the optic nerve are one of two characteristics which currently define progression and thus worsening of glaucoma disease status (the other characteristic is visual field). There is a significant gap in documentation patterns of the optic nerve for both initial and follow-up care (Fremont et al., 2003), even among specialists (Lee et al., 2006).

Examination of the optic nerve head and retinal nerve fiber layer provides valuable structural information

about glaucomatous optic nerve damage. Visible structural alterations of the optic nerve head or retinal nerve fiber layer and development of peripapillary choroidal atrophy frequently occur before visual field defects can be detected. Careful study of the optic disc neural rim for small hemorrhages is important, since these hemorrhages can precede visual field loss and further optic nerve damage.

The following clinical recommendation statement is quoted verbatim from the referenced clinical guidelines and represents the evidence base for the measure:

Ophthalmic Evaluation (American Academy of Ophthalmology [AAO], 2010)

In completing the elements in the comprehensive adult medical eye evaluation, the ophthalmic evaluation specifically focuses on the following elements:

- History
- Visual acuity measurement
- Pupil examination
- Anterior segment examination
- Intraocular pressure measurement
- Gonioscopy
- Optic nerve head and retinal nerve fiber layer examination
- Fundus examination

Evidence for Rationale

American Academy of Ophthalmology Glaucoma Panel. Primary open-angle glaucoma. San Francisco (CA): American Academy of Ophthalmology; 2010. 53 p. [386 references]

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

Fremont AM, Lee PP, Mangione CM, Kapur K, Adams JL, Wickstrom SL, Escarce JJ. Patterns of care for open-angle glaucoma in managed care. Arch Ophthalmol. 2003 Jun;121(6):777-83. PubMed

Lee PP, Walt JG, Doyle JJ, Kotak SV, Evans SJ, Budenz DL, Chen PP, Coleman AL, Feldman RM, Jampel HD, Katz LJ, Mills RP, Myers JS, Noecker RJ, Piltz-Seymour JR, Ritch RR, Schacknow PN, Serle JB, Trick GL. A multicenter, retrospective pilot study of resource use and costs associated with severity of disease in glaucoma. Arch Ophthalmol. 2006 Jan;124(1):12-9. PubMed

Primary Health Components

Primary open-angle glaucoma (POAG); optic nerve head evaluation

Denominator Description

All patients aged 18 years and older with a diagnosis of primary open-angle glaucoma (POAG) (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Patients who have an optic nerve head evaluation during one or more office visits within 12 months

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Opportunity for Improvement

Studies have been undertaken to examine variations in patterns of care for patients with primary open-angle glaucoma (POAG) although there are limited studies specific to the examination of an optic nerve head. A 2003 study (American Academy of Ophthalmology [AAO], 2010) describes current patterns of care for POAG with a focus on processes of care highlighted within the AAO's Preferred Practice Patterns. The AAO recommends the preferred technique for optic nerve head and retinal nerve fiber layer evaluation including magnified stereoscopic visualization (as with the slit-lamp biomicroscope). For this study, information was obtained on processes of care, clinical findings, and treatments related to initial evaluations for POAG and to subsequent evaluations by an eye care provider (ophthalmologist or optometrist) during the study period. Information obtained included whether an evaluation of the optic disc and nerve fiber layer and a photograph or drawing of the optic nerve head were performed at or up to 12 months before or 6 months after the first visit and whether a target intraocular pressure (IOP) level was specified at the first visit. Information for follow-up visits included whether IOP and slit-lamp examinations were performed.

At initial evaluation, 92% of patients received a slit-lamp examination, 93% received an evaluation of the optic disc or nerve fiber layer but only 53% received an optic nerve head photograph or drawing. 1% of patients had a target IOP level specified or documented.

At follow-up visits about 97% of patients had an IOP checked but only 82% had a slit-lamp examination.

Evidence for Additional Information Supporting Need for the Measure

American Academy of Ophthalmology Glaucoma Panel. Primary open-angle glaucoma. San Francisco (CA): American Academy of Ophthalmology; 2010. 53 p. [386 references]

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

Extent of Measure Testing

The American Medical Association (AMA)-convened Physician Consortium for Performance Improvement (PCPI) collaborated on several measure testing projects in 2012, 2013 and 2015 to ensure the Primary Open-Angle Glaucoma Optic Nerve Evaluation, Diabetic Retinopathy – Documentation of Presence or Absence of Macular Edema and Diabetic Retinopathy – Communication with the Physician Managing Ongoing Diabetes Care measures are reliable and evaluated for accuracy of the measure numerator, denominator and exception case identification. The testing projects were conducted utilizing electronic health record data and registry data. Parallel forms reliability and signal-to-noise reliability was tested.

Two sites participated in the parallel forms testing of the primary open-angle glaucoma measure. Site A

was a physician-owned multi-location suburban practice in a large Midwestern city with four providers. Site B was a physician-owned multi-location practice with three providers.

Signal-to-noise reliability was assessed using 2013 data acquired from the Centers for Medicare & Medicaid Services Physician Quality Reporting System Group Practice Reporting Option (GPRO) database.

Primary Open-Angle Glaucoma – Optic Nerve Evaluation

Parallel Forms Reliability Testing (Site A and Site B)

There were 146 observations from two sites used for the denominator analysis. The kappa statistic value was found to be non-calculable resulting from the inability to divide by zero in the statistic formula when only one response was used.

Of the 146 observations that were initially selected, 146 observations met the criteria for inclusion in the numerator analysis. The kappa statistic value of 0.84 demonstrates almost perfect agreement between the automated report and reviewer.

Reliability: N, % Agreement, Kappa (95% Confidence Interval)
Denominator: 146, 60.3%, 0.00 (Non-Calculable, Non-Calculable)*
Numerator: 146, 93.8%, 0.84 (0.73-0.94)
Exception: 146, 100.0%, Non-Calculable* (Non-Calculable, Non-Calculable)**

*Cannot calculate kappa statistics when only one response (Yes/Yes) was used, as this causes a divide-by-zero error in the statistic formula.

**This is an example of the limitation of the Kappa statistic. While the agreement can be 90% or greater, if one classification category dominates, the Kappa can be significantly reduced.

Signal-to-Noise Reliability Testing

Reliability is the ratio of the physician-to-physician variance divided by the sum of the physician-to-physician variance plus the error variance specific to a physician. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in physician performance. Reliability testing was performed by using a beta-binomial model. The beta-binomial model assumes the physician performance score is a binomial random variable conditional on the physician's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates.

Reliability is estimated at two different points, at the minimum number of quality reporting events for the measure and at the mean number of quality reporting events per physician.

For this measure, the reliability at the minimum level of quality reporting events (10) was 0.72. The average number of quality reporting events for physicians included is 121.8. The reliability at the average number of quality reporting events was 0.97.

This measure has moderate reliability when evaluated at the minimum level of quality reporting events and high reliability at the average number of quality events.

Evidence for Extent of Measure Testing

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Long-term Care Facilities - Other

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All patients aged 18 years and older with a diagnosis of primary open-angle glaucoma (POAG)

Note: Refer to the original measure documentation for administrative codes.

Exclusions
None

Exceptions
Documentation of medical reason(s) for not performing an optic nerve head evaluation

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Patients who have an optic nerve head evaluation during one or more office visits within 12 months

Note: Refer to the original measure documentation for administrative codes.

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Electronic health/medical record

Registry data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Measure #1: primary open-angle glaucoma (POAG): optic nerve evaluation.

Measure Collection Name

AMA/PCPI Eye Care I and II Performance Measurement Set

Submitter

American Medical Association - Medical Specialty Society

Developer

American Academy of Ophthalmology - Medical Specialty Society

Physician Consortium for Performance ImprovementÂ® - Clinical Specialty Collaboration

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

Eye Care I Measure Development Work Group*

Work Group Members

Paul P. Lee, MD, JD (*Co-chair*) (ophthalmologist)
Jinnet B. Fowles, PhD (*Co-chair*) (methodologist)
Richard L. Abbott, MD (ophthalmologist)
Lloyd P. Aiello, MD, PhD (ophthalmologist)
Priscilla P. Arnold, MD (ophthalmologist)
Richard Hellman, MD, FACP, FACE (endocrinologist)
Leon W. Herndon, MD (ophthalmologist)
Kenneth J. Hoffer, MD (ophthalmologist)
Jeffrey S. Karlik, MD (ophthalmologist)
Mathew MacCumber, MD (ophthalmologist)
Mildred M. G. Olivier, MD (ophthalmologist)
James L. Rosenzweig, MD, FACE (endocrinologist)
Sam J. W. Romeo, MD, MBA (family practice)
John T. Thompson, MD (ophthalmologist)

Work Group Staff

American Academy of Ophthalmology: Flora Lum, MD

Facilitators: Timothy F. Kresowik, MD; Rebecca A. Kresowik

Health Plan Representative: Andrea Gelzer, MD MS FACP

National Committee for Quality Assurance: Donna Pillittere

American Medical Association (AMA)-convened Physician Consortium for Performance Improvement®(PCPI®): Karen S. Kmetik, PhD; Heidi Bossley, MSN, MBA; Stephen Havas, MD, MPH, MS

*The composition and affiliations of the work group members are listed as originally convened in 2006 and are not up to date.

Financial Disclosures/Other Potential Conflicts of Interest

Conflicts, if any, are disclosed in accordance with the Physician Consortium for Performance Improvement® conflict of interest policy.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Nov 4

Measure Initiative(s)

Physician Quality Reporting System

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Aug

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: American Academy of Ophthalmology, Physician Consortium for Performance Improvement®, National Committee for Quality Assurance. Eye care I physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2010 Sep. 12 p.

Measure Availability

Source available from the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® Web site .

For more information, contact AMA at 330 N. Wabash Avenue Suite 39300, Chicago, Ill. 60611; Phone: 312-800-621-8335; Fax: 312-464-5706; E-mail: cqi@ama-assn.org.

NQMC Status

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Copyright Statement

Production

Source(s)

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

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